

**CORRECTED FROM THE JANUARY 28, 2009 PROPOSED RULES PUBLISHED IN
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DEPARTMENT OF ENERGY, LABOR & ECONOMIC GROWTH

DIRECTOR'S OFFICE

MICHIGAN BOILER RULES

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These rules take effect 60 days after filing with Secretary of State

(By authority conferred on the director of the department of energy, labor & economic growth by section 4 of 1965 PA 290, executive reorganization order nos. 1996-2, 2003-1 and 2008-20, MCL 408.754, MCL 445.2001, MCL 445.2011 and MCL 445.2025)

R 408.4012, R 408.4024, R 408.4025, R 408.4026, R 408.4027, R 408.4031, R 408.4032, R 408.4033, R 408.4038, R 408.4047, R 408.4057, R 408.4058, R 408.4087, R 408.4109, R 408.4114, R 408.4121, R 408.4127, R 408.4171, R 408.4193, R 408.4195, R 408.4197, R 408.4507, and R 408.4701 of the Michigan Administrative Code are amended to the Code and R 408.4186 of the Code is rescinded as follows:

PART 1. GENERAL PROVISIONS

R 408.4012 Definitions.

Rule 12. (1) "Accident" means a sudden and accidental breakdown of a boiler or a part of a boiler that results in physical damage to the boiler which necessitates the repair or replacement of the boiler or a part of the boiler. "Accident" does not mean a breakdown due to any of the following unless a unique or unusual explosion hazard exists as a result of the breakdown:

- (a) Normal erosion.
- (b) Corrosion.
- (c) Wastage of metal that requires restoration.
- (d) Leaking tubes.
- (e) Weakened metal, such as water legs or handhole areas.

(2) "Act" means 1965 PA 290, MCL 408.751 et seq.

(3) "Aftercooler" means a device used for lowering the temperature of a boiler blowoff discharge before it enters the building drain.

(4) "Alteration" means any change in the item described on the original manufacturer's data report that affects the pressure-containing capability of the boiler or its piping. A nonphysical change such as an increase in the maximum allowable working pressure (internal or external) or design temperature of a boiler or its piping is an alteration.

(5) "ASME," "ASME boiler and pressure vessel code," "ASME code," or "code" means the boiler and pressure vessel code of the American Society of Mechanical Engineers, with addenda, as prescribed and approved by the council of the society.

February 26, 2009

(6) “Authorized inspector” means an individual who is designated as an authorized inspector by an authorized inspection agency, who holds a valid certificate of competency and national board commission with an “A” or “B” endorsement, and who is employed by the authorized inspection agency that assumes responsibility for the individual’s actions.

(7) “Board of boiler rules” or “board” means the board created by the act.

(8) “Boiler assembler” means a corporation, company, partnership, or individual who assembles a boiler that has been delivered in pieces. For ASME code section I power boiler assemblies, a boiler assembler shall possess the appropriate code symbol stamps.

(9) “Boiler blowoff piping” means the piping, fittings, and valves from the boiler to the blowoff tank, blowoff separator, or other safe point of discharge through which the water in the boiler may be blown out under pressure, except for drains such as those used in water columns, gauge glasses, or piping to feed water regulators and similar devices.

(10) “Boiler blowdown vessel” means an unfired pressure vessel into which water is discharged above atmospheric pressure from a boiler blowoff line.

(11) “Boiler installation” means the installation of a boiler, including all connected piping, valves, fittings, flanges, firing equipment, controls, appurtenances, and auxiliaries. The term includes the field assembly of boilers.

(12) “CSD-1” means the ASME code for controls and safety devices for automatically fired boilers.

(13) “Certificate of competency” means a certificate issued to a person who has passed an examination for inspectors prescribed by the board of boiler rules.

(14) “Chief inspector” means the chief boiler inspector appointed under the act.

(15) “Condemned boiler” means a boiler that has been inspected and declared unsafe or rejected for use by an inspector who is qualified to take such action and who has applied a stamping or marking designating its rejection.

(16) “Department” means the department of **energy**, labor and economic growth.

(17) “Deputy inspector” means an inspector who is licensed under the act and appointed by the director.

(18) “Existing installation” means and includes any steam boiler constructed, installed, placed in operation, or contracted for before August 10, 1917, or any hot water heating or supply boiler constructed, installed, placed in operation, or contracted for before the effective date of these rules.

(19) “External inspection” means an inspection which is conducted while the boiler is under pressure and which does not involve examination of the internal surfaces of the pressure parts of the boiler.

(20) “Field assembly” means assembling prefabricated boiler pressure parts without field welding or riveting.

(21) “Field erection” means the erecting and assembling of boiler parts by welding, riveting, or other fabrication processes.

(22) “Flash tank” means a closed vessel equipped with internal baffles or an apparatus for the purpose of separating moisture from flash steam as it passes through the vessel.

(23) “Hobby” means an interest or activity that a person pursues in his or her leisure time without compensation.

(24) “Hot water heating and hot water supply boiler” means a boiler that operates at pressures of not more than 160 psi or temperatures of not more than 250 degrees Fahrenheit, at or near the boiler outlet.

(25) “Inspector” means an individual who holds a valid certificate of competency and national board commission.

(26) “Internal inspection” means an inspection made when a boiler is shut down and handholes or manholes are opened for inspection of the interior.

(297) “Labeled” means devices, equipment, appliances, or material to which have been affixed a label, seal, symbol, or other identifying mark of a nationally recognized testing laboratory, inspection agency, or other organization concerned with product evaluation that maintains periodic inspection of the production of the items and by whose label the manufacturer attests to compliance with applicable nationally recognized standards.

(278) “Licensed boiler installer” means a person licensed under the act to engage in the business of making piping connections to a boiler or in the business of field-assembling boilers.

(289) “Licensed boiler repairer” means a person licensed under the act to engage in making or supervising all phases of boiler repair, alteration, or field erection.

(320) “Listed” means equipment, appliances, or material included in a list published by a nationally recognized testing laboratory, inspection agency, or other organization concerned with product evaluation that maintains periodic inspection of production of listed equipment, appliances, or materials, and whose listing states either that the equipment, appliances, or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner. The authority having jurisdiction shall utilize the system employed by the listing organization to identify a listed product.

(301) “Mechanical assembly” means the work necessary to establish or restore a pressure retaining boundary whereby pressure retaining capability is established through a mechanical, chemical, or physical interface.

(342) “Mechanical repair” means a method of repair which restores a pressure retaining boundary to a safe and satisfactory operating condition, where the pressure retaining boundary is established by a method other than welding or brazing.

~~(30) “Michigan special” means a boiler that is not built in compliance with the code., or A boiler is a noncode boiler if it is not stamped with the ASME code symbol stamp.~~

(343) “Miniature boiler” means a power boiler that does not have any of the following:

- (a) An inside diameter of the shell of more than 16 inches.
- (b) A working pressure of more than 100 psig.
- (c) A gross volume of more than 5 cubic feet.
- (d) More than 20 square feet of heating surface.

(334) “Miniature locomotive boiler” means a miniature hobby steam locomotive boiler which operates on a narrow gauge track that is less than 24 inches wide and which is for public display or use.

(35) “Modular boiler” means a steam or hot-water heating assembly consisting of a grouping of individual boilers called modules, intended to be installed as a unit, with a single inlet and a single outlet. Modules may be under 1 jacket or may be individually jacketed.

(3-4-6) “NBIC” means national board inspection code.

(357) “New boiler” means a boiler constructed, installed, placed in operation, or contracted for after July 1, 1966.

(368) “Nonstandard boiler” means a boiler that does not bear the national board stamping or the stamp of any state or political subdivision which has adopted a standard of construction equivalent to that required by the board of boiler rules.

(39) “Owner or user” means a person, firm, partnership, or corporation that owns or operates a boiler within this state.

(40) “Out-of-use boiler” means a boiler not ready for use having the fuel supply, electricity, and all piping that may pressurize the boiler disconnected.

~~(38)~~**(41)** “Portable boiler” means a boiler which is primarily intended for temporary location and which is, by its construction and usage, obviously portable.

(42) “Pressure-retaining items” means any boiler, pressure vessel, piping, or material used for the containment of pressure, either internal or external. The pressure may be obtained from an external source, or by the application of heat from a direct source, or any combination thereof.

~~(39)~~**(43)** “Reinstalled boiler” means a boiler which is removed from its original setting and which is reinstalled at the same location or reinstalled at a new location.

(404) “Rental boiler” means a boiler which is in temporary use for not more than 1 year and which may or may not be installed inside a boiler room, temporary room, or temporary shed or without external covering.

~~(41)~~**(5)** “Repair” means the work necessary to restore a boiler or its piping to a safe and satisfactory operating condition.

~~(42)~~**(6)** “Safe point of discharge” means a point of discharge that will protect personnel and property from injury due to discharge.

(437) “Special inspector” means a boiler inspector who holds a license in the state of Michigan pursuant to 1965 PA 290, MCL 408.751 et seq. and who is regularly employed by an insurance company authorized to insure against a loss from boiler accidents in this state or by any city that is exempt under the act and has an authorized boiler inspection department.

~~(4-4)~~**(8)** “Standard boiler” means a boiler that bears the stamp of the national board of boiler and pressure vessel inspectors or of another state or political subdivision which has adopted a standard of construction equivalent to that required by the board of boiler rules of this state.

~~(45)~~**(9)** “Traction boiler” means a boiler designed for the express purpose of pulling farm equipment or to convert steam power into flywheel energy driving farm apparatus such as threshers, saws, or grinding equipment.

~~(-46)~~**(50)** “Used boiler” means a boiler that is being reinstalled by the same owner.

~~(47)~~**(51)** “Water heater” means a heater for use in commercial or industrial sizes providing corrosion resistance for supplying potable hot water at pressures not exceeding 160 psi or temperatures not exceeding 210 degrees Fahrenheit. A water heater that does not exceed any of the following is exempt from these rules:

- (a) A heat input of more than 200,000 BTU per hour.
- (b) A water temperature of more than 210 degrees Fahrenheit.
- (c) A nominal water-containing capacity of more than 120 gallons.

R 408.4024 Adoption of ~~national board inspection code (NBIC)~~ by reference.

Rule 24. (1) The owner shall ensure the inspection, repair, and alteration of boilers, piping, and blowdown vessels is in accordance with the ~~national board inspection code~~**NBIC, 20042007** edition ~~and 2005 addenda~~ except as modified by these rules. The code ~~and 2005 addenda~~ **are** adopted by reference in these rules and are available for inspection at the Michigan Department of **Energy**, Labor & Economic Growth, Bureau of Construction Codes ~~and Fire Safety~~, 6546 Mercantile Way, Lansing, Michigan 48911 or from the National Board of Boiler and Pressure

Vessel Inspectors, 1055 Crupper Avenue, Columbus, Ohio 43229, at a cost as of the time of adoption of these amendatory rules for a total of ~~\$150.00~~**189.50**.

(2) The accreditation program described in the NBIC for repairs and alterations to pressure retaining items is mandatory for repairs to all power boilers and high pressure high temperature water boilers and alterations to any boiler not exempt by these rules. Repair companies in possession of a certificate of authorization issued by the national board of boiler and pressure vessel inspectors to repair and alter pressure retaining items shall have in their employ an individual with an appropriate class repairer license issued by the boiler division of the department. Repair companies not currently in possession of the certificate of authorization or a certificate of authorization issued by ASME shall have 1 year from the date of adoption of this rule to secure the certificate. Companies currently in possession of a valid certificate issued by ASME have until the next certificate review or 1 year, whichever is greater, to secure the certificate of authorization identified above. The board may waive the time requirement if appropriate justification is presented.

(3) Where the text of the NBIC refers to the "certificate holder," the reference shall apply to all licensed boiler repairers, except when the reference is in relation to completion of NBIC forms and NBIC stamping, the reference shall refer to repair companies in possession of a valid certificate of authorization issued by the national board of boiler and pressure vessel inspectors to repair and alter pressure retaining items.

(4) The standard welding procedures referenced in the NBIC are accepted for use in this state, but are not mandatory. A licensed boiler repairer who elects to use 1 or more of the standard welding procedures shall file a list of the standard welding procedure identification numbers with the boiler division of the department before conducting any repairs or alterations requiring welding.

R 408.4025 ASME code; adoption by reference.

Rule 25. (1) A boiler, **blow down vessel, and expansion tank** shall be constructed as prescribed by these rules and the ASME boiler and pressure vessel code, ~~2004 edition, and its 2005 addenda. Sections I, II, III, IV, V, VIII, IX, X, XI, 2007 edition and its 2008a addenda of the code, and ASME code B31.1-2004~~**2007 edition**, power piping, are adopted by reference in these rules and are available for inspection at the Michigan Department of, **Energy, Labor & Economic Growth, Bureau of Construction Codes and Fire Safety**, 6546 Mercantile Way, Lansing, Michigan 48911 or from the ASME International, 22 Law Drive, Fairfield, New Jersey 07007, at a cost as of the time of adoption of these amendatory rules of ~~\$10,900.00~~**12,874.99** and ~~\$265.00~~**315.00** respectively.

(2) The board may accept pressure-retaining items which have been constructed to standards other than ASME standards and which have been accepted by application of the national board of boiler and pressure vessel inspectors' criteria for registration procedure.

(3) The owner shall not recalculate design maximum allowable working pressures based on ASME codes published after 1998 for boilers in-service before December 31, 1998.

R 408.4026 Inspection and stamping during construction.

Rule 26. ~~(1) An authorized inspector who is licensed to inspect boilers in this state shall, during construction, inspect all boilers, other than cast iron sectional boilers, to be installed in this state, as required by the applicable rules of the board of boiler rules. If a boiler is constructed outside of this state, an authorized inspector who holds a license as an inspector of~~

~~boilers for a state that has a standard of examination substantially equal to that of this state as provided for in R 408.4071 or who holds a commission issued by the national board of boiler and pressure vessel inspectors shall inspect the boiler.~~

~~–(2)~~ The manufacturer shall register a boiler, **blowdown vessel, and expansion tank** other than a cast-iron sectional boiler built or constructed for use in this state after the effective date of these rules, with the national board of boiler and pressure vessel inspectors.

R 408.4027 Adoption; ASME code CSD-1.

Rule 27. (1) The owner shall ensure that the ~~assembly~~**installation**, maintenance, operation, and testing of controls and safety devices is in accordance with manufacturer's instructions and ASME code CSD-1, ~~2004~~**2006** edition, except as modified by these rules. The code ~~and the 2005 addenda are~~is adopted by reference in these rules and are available for inspection at the Michigan Department of **Energy**, Labor & Economic Growth, Bureau of Construction Codes and Fire Safety, 6546 Mercantile Way, Lansing, Michigan 48911 or from the ~~American Society of Mechanical Engineers~~, 22 Law Drive, Fairfield, New Jersey 07007, at a cost as of the time of adoption of these amendatory rules of ~~\$65.00~~**\$85.00**.

(2) An owner or user of a boiler system shall ensure that the ~~assembly~~, maintenance and testing of controls and safety devices is conducted by an individual with a valid mechanical contractor license with the appropriate classification pursuant to 1984 PA 192, MCL 338.971 et seq.

(3) An owner or user shall provide the inspector, at the time of certificate inspection, with evidence showing what tests have been completed annually. The evidence shall be a dated and signed service report or checklist, listing each control and safety device tested with the manufacturer's name, model number, set point, and actual operational test point. An example of a report or checklist may be found in CSD-1, ~~2004~~**2006** edition, appendix C. If an owner does not provide the inspector with the required evidence of annual testing for each year between certificate inspections, then the inspector may issue a certificate of inspection for a term less than that stated in R 408.4057.

Exception: For hot water heating boilers with a BTU input of 400,000 or less, the requirements of this rule need only be conducted once during an inspection cycle but shall be performed within 12 months prior to the certificate inspection required by R 408.4057(1)(c).

(4) The owner, user, or operator of a boiler system shall ensure that the daily, weekly, and monthly operational checks are performed and documented pursuant to the manufacturer's instructions and these rules. **If the manufacturer's instructions are not available**, CSD-1, ~~2004~~**2006** edition, nonmandatory appendix D contains a recommended checklist for additional information on periodic checks.

(5) A manually operated remote shutdown switch as required by CSD-1, 2006 edition, shall be located outside of each exit access doorway to the boiler room. The switch may be located just inside each exit access doorway should a possibility of tampering or weather conditions exist. A licensee may request a deviation from the requirements of this subrule by submitting drawings clearly showing the deviation and stating justification for the request to the chief inspector for review and approval before the installation of a boiler. The chief inspector shall notify the licensee of the approval or denial of the request.

(6) A single manually operated remote shutdown switch may be used in a multiple boiler installation that shares a common boiler room.

Exception: Kitchen cooking boilers, steam kettles, and steam cookers used for food preparation located in a kitchen shall be exempt from a manually operated remote shutdown switch.

(7) Where applicable, the boiler installation shall comply with the Michigan mechanical code, R 408.30901 to R 408.30998, Michigan plumbing code, R 408.30701 to R 408.30796 and Michigan electrical code, R 408.30801 to R 408.30880.

R 408.4031 Installation and reinstallation of boilers.

Rule 31. (1) The owner shall ensure that the installation of a new boiler or a reinstalled boiler is in accordance with the requirements of these rules, ~~and the ASME boiler and pressure vessel code, 20042007 edition, which is adopted by reference in R 408.4025 and the NBIC 2007 edition, which is adopted by reference in R 408.4024.~~

(2) Where applicable, the boiler installation shall comply with the Michigan mechanical code, R 408.30901 to R 408.30998, Michigan plumbing code, R 408.30701 to R 408.30796 and Michigan electrical code, R 408.30801 to R 408.30880.

Exception: (1) The ASME code requirement for the completion of a P4B data report for the installation of mechanically assembled boiler external piping is not required.

(2) The NBIC code, part 1, section 2, paragraph 2.4.4, is enforced by the Michigan plumbing code, R 408.408.30701 to R 408.30796.

(3) Witnessing of the pressure test required by the NBIC part 1, section 2, paragraph 2.10.2, is not required.

(4) The NBIC code, part 1, section 3, paragraph 3.6.1, is enforced by the Michigan mechanical code, R 408.30901 to R 408.30998.

R 408.4032 Non-boiler external piping; power boilers; adoption of standards by reference.

Rule 32. (1) The owner shall ensure that the installation of piping not covered by the ASME boiler and pressure vessel code, section I, ~~20042007~~ edition, and its ~~20042008a~~ addenda is installed as prescribed by the ASME code for pressure piping, B31.1, ~~20042007~~ edition, adopted by reference in R 408.4025.

(2) The owner of a chemical plant or petroleum refinery shall comply with subrule (1) of this rule or shall ensure the installation is installed as prescribed by the ASME code for chemical plants and petroleum refineries, B31.3, ~~20022007~~ edition.

(3) A licensee under this rule is not required to possess an ASME code symbol stamp, but shall hold a valid installer's license.

(4) The owner shall ensure that the installation of all of the following piping is in accordance with subrule (1) of this rule:

- (a) Blowoff piping beyond the second valve out to the safe point of discharge.
- (b) Steam piping out to the load.
- (c) Feed-water piping from the pump.
- (d) Condensate piping.

R 408.4033 Permits; documentation for installation, reinstallation, alteration, and repair of boilers, boiler external piping, and non-boiler external piping.

Rule 33. (1) All of the following provisions apply to installation permits:

(a) A person shall not install, or reinstall, a boiler without holding a proper license and first securing a permit from the boiler division of the department. The licensee applying for the permit shall ensure that work does not proceed until an approved permit has been secured.

(b) A person shall not install or replace welded pipe without holding a proper license and first securing a permit from the boiler division of the department. The licensee applying for the permit shall ensure that work does not proceed until an approved permit has been secured.

(c) A person shall not install nonwelded pipe without holding a proper license. A permit is not required.

(2) All of the following provisions apply to repair and alteration permits or reports:

(a) A person shall not alter or repair a boiler without holding a proper license and first securing a permit from the boiler division of the department. The licensee applying for the permit shall ensure that work does not proceed until an approved permit has been secured, except as provided by section 18 of the act.

(b) A person shall not repair or replace welded piping without holding a proper license and first securing a permit from the boiler division of the department. The licensee applying for the permit shall ensure that work does not proceed until an approved permit has been secured, except as provided for in section 18 of the act.

(c) A person shall not replace nonwelded piping without holding a proper license. A permit is not required.

(d) A person shall not perform welded repairs to nonwelded piping without holding a proper license and first securing a permit from the boiler division of the department. The licensee applying for the permit shall ensure that work does not proceed until an approved permit has been secured, except as provided for in section 18 of the act.

(e) A licensee who makes welded repairs to boilers or boiler external piping requiring the use of the national board "R" symbol stamp shall furnish the boiler division of the department, with 1 copy of the approved permit application, along with reports as required by the NBIC, upon completion of the work.

(f) A public utility or industrial plant that has been granted exemption under section 23 of the act that makes a welded repair to a boiler or boiler external piping, as defined in section I of the ASME code, shall furnish the boiler division of the department with a completed repair report on forms prescribed by the boiler division.

(g) A public utility or industrial plant that has been granted an exemption under section 23 of the act that makes a welded repair to non-boiler external piping shall maintain records of the repairs and make the records available for review as required by the board of boiler rules.

~~(h3)~~ A permit is required for a change in use of an existing boiler or replacement by mechanical methods, without welding, of sections in sectional boilers; heat exchangers; feed water heater or economizer; and, tube bundles. A licensee replacing boiler components required by these rules to be code symbol stamped and national board registered shall provide the boiler division of the department with documentation supporting compliance **with the manufacturer's data reports.**

~~(34)~~ Any changes in the scope of work stated on the original permit application shall be submitted to the inspector for review and approval and reported to the boiler division.

R 408.4038 Fees.

Rule 38. (1) Fees for licenses, **boiler operator and stationary engineer registration;** permits, certificates, and inspections are as follows:

Licenses

Installer license	\$80.00.
Installer exam.....	\$100.00.
Installer renewal.....	\$80.00.
Repairer license.....	\$80.00.
Repairer exam	\$100.00.
Repairer renewal	\$80.00.
Inspector license.....	\$80.00.
Inspector exam.....	\$100.00.
Inspector renewal	\$50.00.
Boiler operator registration.....	\$80.00
Boiler operator examination.....	\$100.00
Boiler operator registration renewal.....	\$80.00
Stationary engineer registration.....	\$80.00
Stationary engineer written examination.....	\$100.00
Stationary engineer registration renewal.....	\$80.00
3rd class stationary engineer oral examination.....	\$150.00
2nd class stationary engineer oral examination.....	\$200.00
1st class stationary engineer oral examination.....	\$250.00

Examination fees are nonrefundable.

Permit applications

Nuclear installation permit application	\$1,380.00.
Nuclear repair permit application	\$400.00.
Low-pressure installation permit application.....	\$75.00.
High pressure installation permit application	\$120.00 +.05 per foot of piping.
Repair permit application.....	\$75.00.

Permit application fees are nonrefundable.

Certificates

Certificates	\$40.00 60.00.
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Inspections

Power boilers-150 square feet or less	\$50.00 70.00.
Power boilers-more than 150 square feet to 4,000 square feet	\$145.00 165.00.
Power boilers-more than 4,000 square feet to 10,000 square feet	\$160.00 180.00.
Power boilers-more than 10,000 square feet.....	\$185.00 205.00.
Low-pressure heating boiler without manhole	\$50.00 70.00.
Inspection of an additional low-pressure heating boiler without a manhole at the same physical location, on the same date	\$40.00 60.00.
Low-pressure heating boiler with manhole.....	\$65.00 85.00.
Low-pressure hot water supply boiler.....	\$40.00 60.00.

Inspection of an additional low-pressure hot water supply boiler at the same physical location, on the same date.....	\$25.00 45.00.
Low-pressure process boiler without manhole	\$50.00 70.00.
Low-pressure process boiler with manhole	\$65.00 85.00.
Miniature hobby locomotive boiler	\$15.00.

Special inspections

(2) The boiler division shall provide special inspections not otherwise covered in the fee schedule. The charge for this service shall be at the rate of \$100.00 for the first hour and \$100.00 for each additional hour, plus lodging, meals, transportation, and other related expenses incurred for performing special inspections.

(3) Fees required under these rules shall be paid by cash, money order, or check to the department. Money orders or checks shall be made payable to: "State of Michigan."

R 408.4047 Exempt boilers.

Rule 47. These rules do not apply to any of the following:

- (a) A boiler under federal control.
- (b) A swimming pool heater, open car wash heater, and similar types of equipment which do not have intervening valves on the return or discharge piping, which do not have a reduction in pipe size in the return or discharge piping, and which do not generate more than normal circulating pump pressure.
- (c) A miniature steam or marine engine used for a hobby.
- (d) A boiler used in the power plant of a self-propelled vehicle designed primarily for transportation of persons or property on a highway, except for a vehicle used exclusively on stationary rails or tracks.
- (e) A boiler used on a mint farm for mint processing purposes.
- (f) A nonvaporizing, organic fluid boiler if the boiler meets all of the following criteria:
 - (i) The system is vented and does not have valves or restrictions in the pipe between the boiler and the vent.
 - (ii) The vent pipe is sized so that the thermal expansion of the fluid will not result in an increase in pressure on the system, which is verifiable with engineering data.
 - (iii) The owner or user provides the boiler division of the department with calculations performed by an engineer, which verify that pressure due to thermal expansion cannot exist in the boiler as installed.
- (g) A low-pressure steam boiler that has a volume of less than 5 cubic feet and that does not have piped feed connections.
- (h) A water tube or coil type hot water heating boiler requiring forced circulation not exceeding any 1 of the following:**
 - (i) Maximum water temperature of 200 degrees Fahrenheit.**
 - (ii) Relief valve set pressure of 30 psi.**
 - (iii) Heat input of 200,000 BTU/hr.**

Exception. Modular or multiple boiler installations exceeding 1,000,000 BTU/hr input are not exempt.

R 408.4057 Boiler inspection.

Rule 57. (1) Once a boiler has been inspected by the chief or deputy inspector and the boiler and its installation approved, all certificate inspections shall be conducted in accordance with the NBIC and these rules by an inspector who is properly licensed to inspect boilers in this state in accordance with the following provisions:

(a) A power boiler, process boiler, or high-pressure, high-temperature water boiler shall receive a certificate inspection annually and shall also be externally inspected annually, while under pressure, within 6 months from the date of the internal inspection.

(b) A low-pressure steam or vapor heating boiler shall receive a certificate inspection biennially.

(c) Hot water heating and hot water supply boilers shall receive a certificate inspection triennially, with an internal inspection at the discretion of the inspector.

(d) A nonvaporizing, organic fluid boiler that is not exempt under these rules shall receive an external certificate inspection triennially.

(e) A miniature hobby locomotive boiler shall receive a certificate inspection annually.

(f) A grace period of 2 months beyond the periods specified in subdivisions (a) to (e) of this subrule may lapse between certificate inspections, and the board may permit longer periods between certificate inspections.

(g) Internal inspection of cast iron boilers shall be at the discretion of the inspector.

(2) The certificate inspection shall be an internal inspection if construction allows, otherwise the certificate inspection shall be as complete an inspection as possible unless specified otherwise under this rule.

(3) The chief inspector, deputy inspector, or a special inspector provided for in the act shall make the inspections specified in this rule.

(4) If, at the discretion of the inspector, a hydrostatic test is necessary, the boiler owner or user shall ensure that the test is performed in the presence of the inspector.

R 408.4058 Extension of internal inspection certificate to 24 months.

Rule 58. (1) An internal boiler inspection may be increased from an annual inspection to a 24-month inspection frequency by approval of the board of boiler rules. An employee delegated by the utility or industrial facility shall apply for the extension. The following information shall be addressed by plant orders, procedures, or policies:

(a) Operator training.

(b) Boiler maintenance.

(c) Water chemistry.

(d) Operating parameters.

(e) Chemical cleaning schedule.

(f) Protective devices.

(g) Boiler external inspection.

(h) Testing of pressure relief valves in accordance with the NBIC. Repairs shall be conducted by the valve manufacturer or a "VR" stamp holder.

The information may be contained in 1 document or several if 1 document contains references to all other documents addressing the required information.

(2) The plant owner shall establish a review committee. The inspector shall be a member of the committee. The purpose of the committee is to determine the acceptability of a boiler to operate safely for a 24-month period. The committee shall have access to and review all information pertaining to the past operation, maintenance, and repair of the boiler. The review

committee meeting shall be conducted within 30 days after the internal inspection. The committee may decrease the period of time the boiler may operate, but shall not extend the period beyond 24 months. **The signed summary report of the review committee meeting shall be submitted to the boiler division of the department.** The grace period provided under R 408.4057 does not apply to this rule. The inspector shall indicate the next inspection due date on his or her inspection report to the boiler division of the department.

(3) Utilities or industrial facilities with a prescheduled boiler internal certificate inspection period shall communicate with the boiler division the date when the boiler is removed from service. The boiler internal inspection may occur at any time during the outage period. The next 24-month operating period shall be calculated based on the date of the certificate inspection conducted during this period.

(34) An external inspection of the boiler shall be conducted while under pressure, within 12 months of the ~~internal~~ **certificate** inspection.

R 408.4087 Reporting unregistered boilers.

Rule 87. (1) If an **special** inspector visits a location to conduct an inspection as required by these rules, then he or she shall report the location of all boilers that are not registered. The report shall be in addition to the report pertaining to the inspection of registered boilers and their installation. The chief inspector shall assign a deputy inspector to visit the location to inspect all unregistered boilers and affix a Michigan serial number.

(2) If an inspector makes an inspection of a boiler that does not bear a Michigan serial number, then the inspector shall attempt to verify whether the boiler is unregistered or is missing the serial number tag. If the inspector is unable to determine that the boiler is registered, then he or she shall report it as prescribed in subrule (1) of this rule.

R 408.4109 Classes of boiler installer's licenses.

Rule 109. (1) A class 1B installer's license qualifies a person to install a low-pressure boiler that does not exceed a firing rate of 1,000,000 Btu per hour as certified by the boiler manufacturer. For a class 1B license, the sum of all modules in a modular boiler shall not exceed a firing rate of 1,000,000 Btu per hour as certified by the boiler manufacturer.

(2) A class 2B installer's license qualifies a person to **do all of the following:**

(a) ~~i~~Install a low-pressure boiler of any capacity or firing rate.

(b) ~~and to~~ Perform work covered by a class 1B license.

(3) A class 3B installer's license qualifies a person to **do all of the following:**

(a) ~~i~~Install a power boiler, that has a capacity of not more than 5,000 pounds of steam per hour.

(b) **Install or replace non-boiler external piping as defined by ASME code B31.1 and R 408.4032.**

(c) ~~and to~~ Perform work covered by a class 2B license.

(4) A class 4B installer's license qualifies a person to **do all of the following:**

(a) ~~i~~Install a boiler that has a capacity of not more than 300,000 pounds of steam per hour.

(b) **Install or replace non-boiler external piping as defined by ASME code B31.1 and R 408.4032.**

(c) ~~and to~~ Perform work covered by a class 3B license.

(5) A class 5B installer's license qualifies a person to **do all of the following:**

(a) ~~i~~Install a boiler of any capacity or firing rate. **Exception:** ~~for~~ a nuclear heat source boiler.

(b) Install or replace non-boiler external piping as defined by ASME code B31.1 and R 408.4032.

(c) Perform work covered by a class 4B license.

(6) A class 6B installer's license qualifies a person to install a boiler that utilizes a nuclear heat source or its parts, appurtenances, or system components. Before a license is issued, an applicant for a class 6B license shall **submit** ~~give~~ evidence of **both of the following:**

(a) ~~Familiarity with and knowledge of all federal rules and regulations regarding the installation of a boiler that has a nuclear heat source.~~ ~~and shall be in the employ of~~

(b) Employment by a company in possession of a valid ASME nuclear code symbol applicable to the portions of any nuclear boiler system that the company proposes to install.

(7) A class P license qualifies a person to install **or replace** non-boiler external piping or repair non-boiler external piping as defined by ASME code B31.1 and R 408.4032.

R 408.4114 Inspection of components and systems in a nuclear power plant.

Rule 114. (1) Preservice (baseline) inspection, in-service inspection, repair, replacement, modification, alteration, examination, testing, records, and reports of individual nuclear components, parts, appurtenances, piping, supports, nuclear systems, applicable associated auxiliary systems, and complete nuclear power plants that are in compliance with all of the requirements of the construction code, at the point in time the requirements have been completed, irrespective of the physical location, shall be as prescribed in section XI, rules for in-service inspection of nuclear power plant components, of the ASME boiler and pressure vessel code. A copy of the current edition of section XI is available for inspection at the Michigan Department of **Energy**, Labor & Economic Growth, Bureau of Construction Codes ~~and Fire Safety~~, 6546 Mercantile Way, Lansing, Michigan 48911 or from the ASME International, 22 Law Drive, Fairfield, New Jersey 07007, at a cost as of the time of adoption of these amendatory rules of \$~~495.00~~**610.00**.

(2) The owner of a nuclear power plant shall file inspection plans and schedules, pump and valve testing programs, and requests for relief from section XI of the ASME code requirements with the boiler division of the department.

(3) The nuclear power plant shall maintain compliance with requirements, as prescribed by the ~~Nuclear R~~egulatory ~~C~~ommission.

R 408.4121 Examination for boiler repairer's license; establishment; administration; nuclear repairer license applicant; certificate of authorization; examination.

Rule 121. (1) ~~The examination for a boiler repairer's license shall be approved by the board of boiler rules.~~ The examination ~~will~~ **shall** be held quarterly at a location determined by the boiler division of the department.

(2) An applicant wishing to upgrade his or her license to a higher classification shall take the examination prescribed in subrule (1) of this rule.

(3) The director, upon the request of a company in possession of a valid ASME "N" type certificate of authorization or the national board of boiler and pressure vessel inspectors "NR" certificate of authorization, shall issue, to an individual of the company, a license as a nuclear repairer if the individual, before receiving his or her license, satisfactorily passes the examination prescribed in subrule (1) of this rule.

R 408.4127 Boiler repairers; classes of licenses.

Rule 127. (1) A class I license allows a licensee to repair a boiler by means other than welding, riveting, or other fabrication process.

(2) A class II license allows a licensee to **do both of the following:**

(a) ~~repair~~ **Repair** a low-pressure boiler, a hot water supply boiler, and a fire tube boiler of any pressure.

(b) ~~and to perform~~ **Perform** work covered by a class I license.

(3) A class III license allows a licensee to **do all of the following:**

(a) ~~Repair a high-pressure water tube boiler.~~

(b) **Repair or replace non-boiler external piping, as defined by ASME code B31.1 and R 408.4032.** ~~designed for a maximum allowable working pressure of not more than 700 psi and~~

(c) **Perform work** ~~a boiler~~ covered by a class II license.

(4) A class IV license allows a licensee to **do all of the following:**

(a) ~~Repair or field erect a boiler of any pressure.~~ **Exception:** ~~for a boiler that has a nuclear heat source.~~

(b) **Repair or replace non-boiler external piping as defined by ASME code B31.1 and R 408.4032.**

~~A licensee who field erects boilers shall be in the employ of a company in possession of the appropriate ASME code symbol stamps for the type of boiler being erected.~~

(5) A class V license allows a licensee to erect and repair a boiler that has a nuclear heat source or its parts, appurtenances, or system components, **and also provides the following:**

(a) **The licensee may repair or replace non-boiler external piping, as defined by ASME code B31.1 and R 408.4032.**

(b) Before a license is issued, an applicant for a class V license shall ~~give~~ **submit** evidence of **the following:**

(i) ~~Familiarity with and knowledge of all federal rules and regulations regarding the construction of a boiler that has a nuclear heat source.~~ ~~and shall be employed by a~~

(ii) **Employment by** a company in possession of a valid ASME N-type symbol stamp applicable to the portions of any nuclear boiler system he or she proposes to repair.

(6) A class P license qualifies a person to install or repair non-boiler external piping as defined by ASME code B31.1 **and R 408.4032.**

(7) A licensed boiler repairer shall secure a permit for a change in use of an existing boiler or replacement by mechanical methods, without welding, of sections in sectional boilers, heat exchangers, feed water heater or economizer, and tube bundles in accordance with R 408.4033.

R 408.4171 Removal of used boilers from the state.

Rule 171. (1) If an ASME boiler located in this state is to be moved to another state for temporary use or repairs, application shall be made by the owner ~~or user~~ to the chief inspector for permission to reinstall the boiler in this state **as prescribed in R 408.4177.**

(2) **Repairs conducted outside of this state to boilers that will be reinstalled in this state shall be conducted by an organization in possession of a valid certificate of authorization to repair boilers. The organization shall conduct the repair in accordance with the NBIC and submit all forms required by the NBIC.**

R 408.4186 **Rescinded.** ~~Steam cleaners.~~

~~Rule 186. (1) A steam cleaner is subject to all of the provisions of these rules and the act if steam is generated in the coils or any of the following limitations are exceeded:~~

- ~~-(a) A 3/4 inch diameter tube or pipe that does not have drums or heads attached.~~
- ~~-(b) A nominal water containing capacity of 6 gallons.~~
- ~~-(c) A water temperature of 350 degrees Fahrenheit.~~
- ~~-(d) A Btu input per hour of 800,000.~~
- ~~-(2) A steam cleaner that does not exceed any of the limitations specified in subrule (1) of this rule is exempt from these rules and the act if equipped with adequate controls and with appropriate ASME safety valves.~~

R 408.4193 Stairways, ladders, platforms, and runways.

Rule 193. ~~(1) If the distance from the floor to the top of a boiler or boiler setting is more than 8 feet, then a permanent stairway or permanently attached inclined or vertical ladder shall be installed to give safe access to, and permit exit from, boiler tops. A permanent platform that provides access to the main stop valve and safety valves of a boiler shall be installed without obstructing the valves. A platform is not required for main stop valves that are operated from a remote location.~~

~~-(2) If the distance from the floor to the top of 2 or more adjacent boilers or boiler settings is more than 8 feet, then a steel runway or platform which is not less than 18 inches wide and which is provided with standard handrails and toeboards on either side shall be installed across the top of adjacent boilers or at some other convenient level to afford safe access to the boiler. A runway shall have not less than 2 means of exit which are remotely located from each other and which are connected to a permanent stairway or inclined ladder leading to the floor level.~~

~~-(3) If the distance from the top of a boiler or boiler setting to the ceiling is less than 6 feet, then special consideration to meet the requirements of this rule will be given by the chief inspector upon receipt of detailed plan information. The chief inspector shall notify the owner or user of his or her decision regarding a request for special consideration and, if denied, shall indicate his or her reasons for the denial.~~

~~-(4) If the low point of a water column is located 15 feet or more above the floor or walkway, then a platform that has a standard toeboard shall be installed.~~

~~(51) A platform shall be installed at 1 end of all drums of a water tube boiler that are more than 4 feet above the floor or walkway to permit safe access to the interior of the drums for cleanout and inspection.~~

~~(6) A boiler shall be provided with platforms at cleanout openings on the side walls that are more than 4 feet above the floor or walkway.~~

~~(72) An inspector shall notify the chief inspector of an owner or user who is required to conform to this rule, and the chief inspector shall give written notice to the owner or user that the installation of the required stairway, runway, platform, or ladder is to be made. The owner or user shall be allowed 1 year from the date of the chief inspector's notification to complete the work.~~

~~(83) A licensee may request a deviation from the requirements of this rule by submitting drawings to the chief inspector for review and approval before installation of the boiler. The licensee will be notified by the chief inspector of the approval or denial of the request.~~

R 408.4195 Exits from boiler rooms.

Rule 195. ~~(1) The owner shall ensure that the exit from a boiler room has complies with the requirements specified in the Michigan building code, R 408.30401 to R 408.30547.~~ **not less**

than 2 egress doorways where the area of the room is more than 500 square feet and the Btu/hour input capacity of the boiler or boilers is more than 400,000 Btu/hour.

~~—(2) The owner shall ensure that doorways are separated by a horizontal distance equal to not less than 1/2 of the diagonal dimension of the room. If 2 doorways are required by this rule, then a fixed ladder access out of the room is permitted in place of 1 doorway.~~

~~—(3) An inspector shall notify the chief inspector of an owner or user who is required to comply with subrule (1) of this rule. The chief inspector shall give written notice to the owner or user that the necessary work must be completed within 1 year from the date of notification.~~

R 408.4197 Clearance between boilers and other objects.

Rule 197. (1) A licensee performing an installation shall assure that a minimum clearance of 24 inches is provided between a boiler, its controls, firing equipment, and appurtenances and the building walls and partitions or other boilers or machinery. The licensee shall assure that clearances are in accordance with the manufacturer's instructions where required clearances are greater than the minimum required by this rule. The boiler owner shall assure that the clearances are maintained for the life of the boiler and shall not be infringed upon by items in storage.

(2) The elevation of a boiler above the floor shall be as specified in the Michigan mechanical code, R 408.30901 to R 408.30998.

(23) A licensee may request a deviation from the requirements of this rule by submitting drawings to the chief inspector for review and approval before installation of the boiler. The licensee shall be notified by the chief inspector of the approval or denial of the request.

PART 5. INSERVICE INSPECTION OF BOILERS

R 408.4507 ~~Special~~**Pressure hydrostatic testing.**

Rule 507. **The inspector may require a pressure test to assess leak tightness of the pressure retaining item. Pressure testing methods shall be as described in the NBIC.**~~(1) At the interval specified by this rule, the owner shall ensure that a special hydrostatic test is performed. The owner shall ensure that the test pressure is not less than 80% of the maximum allowable working pressure and is not more than 1 1/2 times the maximum allowable working pressure. The test pressure shall be acceptable to the inspector. The owner shall ensure that the water temperature used to apply the hydrostatic test is not less than 70 degrees Fahrenheit and that the maximum metal temperature is not more than 120 degrees Fahrenheit. Hold time for the examination by the inspector shall be the time necessary for the inspector to conduct the examination, but not less than 10 minutes. The inspector may require the owner to expose all longitudinal seams, girth seams, boiler supports, and attachments for inspection. All of the following are required for testing:~~

~~—(a) The owner shall ensure that a test of a riveted boiler is performed at 30 years and every 4 years thereafter. An inspector may require removal of rivets to ascertain their condition.~~

~~—(b) The owner shall ensure that a test of a lap seam boiler which is less than 36 inches in diameter and which operates at 100 psig or less is performed at 20 years and every 4 years thereafter. A lap seam boiler which is more than 36 inches in diameter or which operates at more than 100 psig shall not operate in this state.~~

~~—(c) The owner shall ensure that a test is performed on a welded boiler at 30 years and every 8 years thereafter for boilers on a 1 or 2 year inspection frequency and every 9 years for boilers on a 3 year inspection frequency.~~

- ~~-(d) The owner shall ensure that a leak test is performed on a mechanically assembled boiler at 30 years and every 8 years thereafter. The hydrostatic pressure shall not exceed the safety/safety relief valve setting. The inspector may require an internal inspection.~~
- ~~-(e) The owner may request a waiver of the special hydrostatic test required under this rule to the chief inspector if the boiler stated in the request has been granted an extension of the internal inspection frequency under R 408.4058. If a waiver is granted, the review committee established under R 408.4058 shall evaluate the condition of the boiler during each review to determine if a hydrostatic test is necessary.~~
- ~~-(2) The inspector may require a nondestructive examination for seams or weldments that are inaccessible.~~

PART 7. BOILER BLOWOFF SYSTEMS

R 408.4701 Design and construction of blowdown vessel reports.

Rule 701. (1) The owner shall ensure that blowdown vessels for use in the state of Michigan are designed and constructed as prescribed by these rules and the ASME boiler and pressure vessel code, section VIII, division 1, entitled "Unfired Pressure Vessels," 2004~~2007~~ edition, and its 2005~~2008a~~ addenda which are adopted by reference in these rules and are available for inspection at the Michigan Department of **Energy, Labor & Economic Growth**, Bureau of Construction Codes, 6546 Mercantile Way, Lansing, Michigan 48911 or from the ASME International, 22 Law Drive, Fairfield, New Jersey 07007, at a cost as of the time of adoption of these amendatory rules of \$~~495.00~~**610.00**. National board of boiler and pressure vessel inspector document NB-27, 2004 edition, may be used as a guide for the design of blowdown tanks.

(2) The owner shall ensure that a blowdown vessel has a minimum allowable working pressure of 50 psig and that the installation complies with these rules and the vessel manufacturer's instructions.

(a) The blowdown vessel, its fittings, and connections shall be sized so that the internal pressure does not rise more than 5 psig above ambient pressure during the blowdown.

(b) The blowdown vessel shall be provided with adequate openings to facilitate internal cleaning and inspection. An internal inspection of the blowdown vessel shall be conducted during the certificate inspection of the boiler.

(c) The blowdown vessel shall be provided with the following fittings and connection openings in addition to those provided by the manufacturer for the proper installation and operation of the vessel:

- (i) A vent connection.
- (ii) A drain connection. A drain connection is not required on a separator.
- (iii) A thermometer that has a maximum scale reading of 300 degrees Fahrenheit and that is located in the water outlet from the blowdown vessel.
- (iv) A pressure gauge that is graduated from 0 to 30 psig and that is attached to the top of the steam space of the blowdown vessel.

(d) The blowdown vessel shall be installed in a location that prevents it and its connected piping from freezing and shall be installed in a manner that permits both internal and external inspection.

(3) A manufacturer shall provide the boiler division of the department, with the manufacturer's data reports. A data report that is signed by an authorized inspector, together with the ASME

code symbol stamp on the vessel, is the record denoting that the blowdown vessel has been constructed in accordance with the ASME code.

(4) The manufacturer shall register all blowdown vessels for use in the state of Michigan with the national board of boiler and pressure vessel inspector.